

RECORDS OF SOME ECTOPARASITES FROM NIGERIA¹

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ABSTRACT: The purpose of this paper is to present information on a series of ectoparasites, mainly mites, from Nigerian small mammals.

Ectoparasites were collected from a series of mammals from Nigeria during an appointment by the junior author as Visiting Professor, University of Ibadan⁴. The present contribution is a continuation of a series "Preliminary Report on Mites Collected from Plants and Animals in Nigeria" (Matthysse 1978, Matthysse and Funmilayo 1979).

There are relatively few data on ectoparasites of Nigerian mammals, but some of the papers most relevant to the present study are Coffee and Retief (1972); Okereke (1968, 1970, 1971, 1973) who studied Nigerian Gamasina and described several new species; Zumpt and Elliot (1970) who described new species of Nigerian *Androlaelaps*; Sakamoto et al. (1979) who described new species of *Haemolaelaps* from Nigeria; Till (1963) who monographed Ethiopian *Androlaelaps*; Keegan (1956, 1962) who gave information on 4 species of mites first found in Nigeria; Lavoipierre (1956) who described a new *Steatonyssus* from Nigerian bats; Fain (1970, 1971, 1972) who summarized information on African myocoptid and listrophoroid mites; and Pearse (1929) who collected information on ectoparasites of several species of Nigerian rodents and insectivores.

Materials and Methods

Parasites were collected from wild mammals, mainly caught in traps, in or near Ibadan from January through August, 1975. They were collected by first manipulating the fur while viewing it under a dissecting microscope. Each animal was then washed in an aqueous detergent solution, after which the liquid was filtered through a Buchner funnel. Parasites were then picked off the filter paper while viewing through a dissecting microscope. The ectoparasites were preserved in 70% alcohol, cleared and stained for 5 days

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to 2 weeks in Nesbitt's solution containing acid fuchsin, mounted in Hoyer's Solution and the coverslips were ringed with Euparal. Help in identifications was given as follows: Laelapidae, W. Calvin Welbourn (Acarology Laboratory, Ohio State University); ticks and fleas, Nixon A. Wilson (University of Northern Iowa); listrophoroid and other parasitic mites, Alex Fain (Institut de Médecine Tropical Prince Leopold, Antwerpen, Belgium); free-living mites, Evert E. Lindquist (Research Branch, Biosystematics Research Institute, Agriculture Canada, Ottawa); lice, K.C. Emerson (2704 N. Kensington St., Arlington, Virginia). The chiggers and a few other mites are not included because they have not yet been identified. The ticks were mainly immature and have not as yet been identified beyond genus.

The host animals were identified by Dr. Oluwadare Funmilayo, Department of Agricultural Biology, University of Ibadan, Ibadan, Nigeria.

Results and Discussion

Parasites were identified from a few individuals of each of several species of rodents, plus two shrews, *Crocidura manni* and *Crocidura* sp., from Nigeria (Table 1). Several species of fleas, anoplurans, and mites were taken, along with a few ticks and chiggers.

Siphonaptera

Only two species of fleas, *Xenopsylla aequisetosus* and *X. cheopis*, were taken during the present study. Both were from *Cricetomys gambianus*. Pearse (1929) took these same two species from rodents and *Crocidura* from Nigeria, along with two other species of fleas.

Anoplura

Five species of sucking lice were found, each on a different mammal species. Pearse (1929) reported *Polyplax reclinata* from *Crocidura manni* and *P. abyssinica* Ferris from *Arvicantis mordax* from Nigeria. We are not aware of previous records from Nigeria of the lice *Hoplopleura chippauxi*, *H. intermedia*, or *H. somereni*.

Acarina: Ixodidae

Ticks of three genera (*Ixodes*, *Haemaphysalis*, and *Rhipicephalus*) were found during the present study.

Laelapidae

Several laelapid mites were found during the present study, primarily of three genera, *Andreacarus*, *Androlaelaps*, and *Laelaps*. *Andreacarus petersi* was first described from parasitic insects from the giant rat, *Cricetomys gambianus* (Radford, 1953). However, Tipton (1960) suggested that they might normally parasitize the rat itself, and this was the case as indicated by present data and by Clifford and Keegan (1963) who also

examined specimens of this species from Nigeria. Okereke (1971) stated that *A. petersi* and *A. zumpti* Taufflieb are true rodent parasites in Nigeria.

Androlaelaps cricetomys was described by Zumpt and Elliott (1970) from *C. gambianus* from Nigeria. Okereke (1970) notes that *A. cricetomys* was known only from Northern Nigeria. Ours are the first records from Southern or Western Nigeria.

All of the mites of the subgenus *Echinolaelaps*, genus *Laelaps*, taken by us have been previously taken in Nigeria, and *L. litigiosa* and *L. dasymydis* Retief were described from there (Coffee and Retief, 1972; Okereke, 1973).

Okereke (1971) collected 20 species of gamasine mites from more than 1000 small mammals in the Ibadan, Nigeria, area. Nine of the species were the same as ours, as follows: *Laelaps (Echinolaelaps) muricola* on 13 hosts, *L. (Echinolaelaps) echidninus* on *Rattus rattus* only, *L. (Echinolaelaps) giganteus* on 8 hosts, but mainly on *Lemniscomys striatus* and *Arvicantis niloticus*, *Laelaps roubandi* on 2 hosts, *Andreacarus petersi* and *A. zumpti* on *Cricetomys gambianus* only, *Androlaelaps murinus* on 11 hosts, *A. zulu* on 16 hosts and *A. galagus* on *Cricetomys gambianus* only.

Okereke (1973) in a further report on his Nigeria collections notes that *Echinolaelaps dasymydis* occurs primarily on *Dasymys incomtus*. Pearse (1929) found *Laelaps liberiensis* on Nigerian mammals.

We are not aware of previous records from Nigeria of the laelapid mite, *Laelaps lavieri*.

Atopomelidae

Six species of atopomelid mites were reported. Previous data on mites of this family from Africa were summarized by Fain (1972a). *Listrophoroides (Listrophoroides) aethiopicus* Hirst, 1923, was previously reported from several African localities, always on *Cricetomys gambianus*, the same host on which we found it. *Listrophoroides (Listrophoroides) dasymys* Radford, 1942, has been found alway on species of *Dasymys* from several African localities. Matthysse and Funmilayo (in press) report *L. dasymys* from *D. incomtus* at Ibadan, Nigeria. *Listrophoroides (Afrolistrophoroides) teinophallus* Fain, 1970, was previously found on *Rattus (Mastomys) natalensis*, and this is the only host upon which we found it. *Listrophoroides (Afrolistrophoroides) scambophallus* Fain, 1970, was previously found on *Rattus (Mastomys) natalensis*, *Praomys tullbergi* and *Otomys* sp.; we found it on *M. natalensis*.

One species was listed in the *Listrophoroides (Afrolistrophoroides) mastomys* group. This form was previously reported from *Mastomys natalensis*, *R. erythroleucus* and *Thallomys paedulcus*. Our single specimen was from *Mus musculoides*. We found three specimens of *Listrophoroides uranomys* on an unidentified rodent. This mite is previously known only from *Uranomys ruddi* and *Acomys johannis*, except that Matthysse and Funmilayo report *L. uranomys* Fain, 1970, from *Uranomys foxi* at Ibadan, Nigeria.

Listrophoridae

Four forms in the family Listrophoridae were also reported. Data on this family were previously summarized by Fain (1971). *Afrolistrophorus dasymys* was found during the present study primarily on *Dasymys incomitus*, but a few individuals were found on *Lophuromys sikapusi*, *Praomys tullbergi* and *Rattus rattus*. Matthysse and Funmilayo (1979) also report *A. dasymys* from *D. incomitus* and *R. rattus*, but in addition from *Mus musculoides*, all from Ibadan, Nigeria. This species was previously known only from *Dasymys incomitus* from the Congo (Zaire) and from the Ivory Coast. Matthysse and Funmilayo (1979) report *Afrolistrophorus lophuromys lophuromys* Fain from *Lophuromys sikapusi* taken at Ibadan, Nigeria. The identification was made by Fain. The *A. lophuromys* (Radford, 1940) we report may be the same subspecies. *Afrolistrophorus lophuromys* and *A. congoicola* were known from several African localities and mammals. *Afrolistrophorus muricola* was previously known from *Mus*, *Rattus*, and *Crocidura* from the Ivory Coast; we found it on *Mus musculoides*.

The atopomelids *Listrophoroides* (*Listrophoroides*) *aethiopicus*, *Listrophoroides* (*Afrolistrophoroides*) *teinophallus*, *L.* (*A.*) *scambophallus* and *L.* (*A.*) *mastomys* and the listrophorid, *Afrolistrophorus muricola* are new records for Nigeria.

Glycyphagidae

Dermacarus from *Dasyurus incomitus* was identified as probably *D. oenomys* Fain. Matthysse and Funmilayo (1979) report *Dermacarus oenomys* (identified by Fain) from *Dasyurus incomptus* from Ibadan, Nigeria.

Other Mites

Nymphal mites of the family Uropodidae frequently attach to insects or other animals. A number of nymphal uropodid mites, *Trichouropoda* sp., was taken from *Cricetomys gambianus*. The genus *Ornithonyssus* is often represented in low numbers on small mammals, and four individuals were found on one host species during the study. Mites of the families Acaridae and Tarsonemidae are likely accidentals on the host.

Myobiidae

Radfordia ensifera is widespread on *Rattus rattus* and *R. norvegicus* over much of the world and on *R. rattus* specifically in Angola (Fain, 1972b), in South Africa (Zumpt, 1961), and in Zaire (Fain and Lukoschus, 1977). *Radfordia hylomyscus* was described from *Hylomyscus simus* from the Ivory Coast by Fain (1972c). Neither of the myobiids had previously been recorded from Nigeria.

Table I. External parasites of some small mammals from Ibadan, Nigeria (upper number is the number of hosts on which the parasite was found; lower is the number of parasites found).

	<i>Crocidura mami</i>	<i>Crocidura sp.</i>	<i>Arricanthis niloticus</i>	<i>Cricetomys gambianus</i>	<i>Dasyurus inconstans</i>	<i>Leggada musculoides</i>	<i>Lophuromys sikapusi</i>	<i>Mastomys natalensis</i>	<i>Mus musculoides</i>	<i>Prionomys tullbergi</i>	<i>Rattus alexandrinus</i>	<i>Rattus rattus</i>	unidentified rodents
number of hosts examined													
Fleas													
<i>Xenopsylla aequisetosus</i> (Enderlein, 1901)									3				
									8				
<i>X. cheopis</i> (Rothschild, 1903)								1					
								1					
Sucking lice													
<i>Polyplax reclinata</i> (Nitzsch, 1864)					1								
					3								
<i>Hoplopleura intermedia</i> Kellogg & Ferris, 1915											1		10
<i>H. somereni</i> Waterston, 1923								3					
								6					
<i>H. chippauxi</i> (Paulian and Pajot, 1966)				1									
				3									
<i>Polyplax spinulosa</i> (Burmeister, 1839)											8		
											34		
Ticks													
<i>Haemaphysalis</i> sp.					1								
					6								
<i>Rhipicephalus</i> sp.				1									
				1									
<i>Ixodes</i> sp.						1			1				
						1			1				
Mites													
Acaridae													
<i>Tyrophagus</i> sp.			1	1					1				
			1	1					9				
Laelapidae													
<i>Andreacarus petersi</i> Radford, 1953						2							
						25							
<i>A. zumpti</i> Taufflieb, 1955							1						
							1						
<i>Androlaelaps cricetomys</i> Zumpt & Elliott, 1970							4						
							74						

	<i>Crocidura mami</i>	<i>Crocidura sp.</i>	<i>Arycanthias niloticus</i>	<i>Cricetomys gambianus</i>	<i>Dasyurus incomis</i>	<i>Leggada musculooides</i>	<i>Lophuromys sikapusi</i>	<i>Mastomys natalensis</i>	<i>Mus musculooides</i>	<i>Praomys tullbergi</i>	<i>Rattus alexandrianus</i>	<i>Rattus rattus</i>	unidentified rodents
number of hosts examined	(1)	(1)	(2)	(6)	(7)	(1)	(1)	(6)	(2)	(9)	(1)	(13)	(3)
<i>A. galagus</i> (Lavoipierre, 1955)				1									
<i>A. murinus</i> Berlese, 1911			2		1								
<i>A. zulu</i> (Berlese, 1918)			1				1		1				
<i>Hypoaspis</i> nr. <i>machado</i> Aswegen & Loots, 1970	1		1			3		1					
<i>L. lavieri</i> Taufflieb, 1954				1			1						
<i>L. liberiensis</i> Hirst, 1925				1			3				1		
<i>L. roubaudi</i> Taufflieb, 1954				6			10				3		
<i>Laelaps</i> (<i>Echinolaelaps</i>) <i>dasymydis</i> Okereke, 1973					5								
<i>L. (E.) giganteus</i> Berlese, 1918	1				46								
<i>L. (E.) litigiosa</i> Coffee & Retief, 1972	2									5			
<i>L. (E.) muricola</i> Tragardh, 1910						2				28			
<i>L. (E.) echidninus</i> Berlese, 1887						24				2			
										10			
											1		
												1	
Macronyssidae													
<i>Ornithonyssus</i> sp.								1					
								4					
Uropodidae													
<i>Trichouropoda</i> sp.				2									
				34									
Listrophoridae													
<i>Afrolistrophorus dasymys</i> Fain, 1970				5			1			1			
<i>A. lophuromys congoicola</i> Fain, 1971				227		2			3				
<i>A. lophuromys</i> (Radford, 1940)						1							
<i>A. muricola</i> Fain, 1970						2							
						1							
						3							
							1						
							4						

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